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**AMENDMENTS TO THE CLAIMS:** 

This listing of the claims will replace all prior versions, and listings, of the claims in this

application.

Please cancel claims 2, 30-43 and 47 without prejudice.

**Listing of Claims:** 

1. (Currently Amended) A system for applying a marking to an optical media, the system

comprising: a first unit for applying a coating composition comprising at least one photosensitive

material to form a coating comprising at least one photosensitive material to over at least one

data readout area of the optical media; a second unit comprising a first ultraviolet (UV) light

source for exposing the coating to wavelengths of <u>UV</u> light wherein the wavelengths of <u>UV</u> light

cure the coating upon the at least one readout area; a third unit for creating an image of the

marking; and, the third unit comprising a second UV light source for exposing at least a portion

of the coating to the image for recording the marking into the coating, wherein the wavelengths

produced by the first UV light source comprise wavelengths substantially separate from

wavelengths of the second UV light source, further comprising a conveyor to transport the optical

media from the first unit to the second unit and to the third unit in a sequential manner.

2. (Cancelled).

3. (Original) The system as in claim 1, wherein at least one of the first light source and the

second light source comprise a wavelength filter.

4. (Original) The system as in claim 3, wherein the wavelength filter comprises a wavelength

cutoff filter rated for wavelengths between about 340 nm to about 370 nm.

5. (Original) The system as in claim 1, wherein the coating comprises at least one each of a

photoinitiator, a photoacid generator and a color former.

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6. (Original) The system as in claim 5, wherein the photoinitiator comprises at least one of: a stable liquid mixture of trimethylbenzoyldiphenylphosphine oxide, .alpha.-hydroxyketones, and benzophenone derivatives; 2-Benzyl-2-dimethylamino-1-(4-morpholinophenyl)-butanone-1; Bis(2,4,6-trimethylbenzoyl)-phenylphosphineoxide; an eutectic liquid mixture of: 2,4,6 trimethylbenzophenone and 4 methylbenzophenone; a mixture of 50% 2,4,6-Trimethylbenzoyl-diphenyl-phosphineoxide and 50% 2-Hydroxy-2-methyl-1-phenyl-propan-1-one; 1-[4-(2-Hydroxyethoxy)-phenyl]-- 2-hydroxy-2-methyl-1-propane-1-one; isopropyl thioxanthone; a liquid mixture of about 70% Oligo [2-hydroxy-2-methyl-1-[4-(1-methylvinyl) phenyl] propanone and about 30% 2-hydroxy-2-methyl-1-phenyl propan-1-one.

7. (Original) The system as in claim 5, wherein the photoacid generator comprises at least one of: bis (4-tert-butylphenyl) iodonium p-toluenesulfonate; (tert-butoxycarbonylmethoxynaphthyl) diphenyl sulfonium triflate; (4-phenoxyphenyl) diphenyl sulfonium triflate; (4-tert-Butylphenyl) diphenyl sulfonium triflate; diphenyliodonium hexafluorophosphate; diphenyliodonium triflate; triphenylsulfonium triflate; 2-methyl-4,6-bis(trichloromethyl)-s-triazine; tris(2,4,6-trichloromethyl)- -s-triazine; 2-phenyl-4,6-bis(trichloromethyl)-s-triazine; 2-(4-chlorophenyl)-4,6-bis(trichloromethyl)-s-triazine; (4-methylphenyl)diphenyl sulfonium triflate; and, diphenyl iodonium hexafluorophosphate.

- 8. (Original) The system as in claim 5, wherein the color former comprises at least one of COPIKEM 16 Red, COPIKEM 6 Green, COPIKEM 34 Black, PERGASCRIPT Red I-6B, BK-305 Black, S-205 Black, BK-400, PERGASCRIPT Orange I-G, PERGASCRIPT Green I-2GN, PERGASCRIPT Blue I-2RN, PERGASCRIPT Black I-2R and Red 520.
- 9. (Original) The system as in claim 5, wherein the coating further comprises a wetting agent.
- 10. (Original) The system as in claim 9, wherein the wetting agent comprises at least one of a polyether modified poly-dimethyl-siloxane; a crosslinkable silicone polyether acrylate; and a crosslinkable silicone acrylate.

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11. (Original) The system as in claim 1, wherein the coating comprises a mixture comprising at

least one acrylate.

12. (Original) The system as in claim 11, wherein the acrylate comprises at least one of:

ethoxylated pentaerythritol tetraacrylate; 1,6 hexanediol diacrylate; tetrahydrofurfuryl acrylate;

highly propoxylated (5.5) glyceryl triacrylate; 3 mole propoxylated glyceryl triacrylate; 3 mole

ethoxylated trimethylolpropane triacrylate; tris (2-hydroxy ethyl) isocyanurate triacrylate;

ditrimethylolpropane tetraacrylate; urethane diacrylate oligomer; isobornyl acrylate; a

difunctional bisphenol A based epoxy acrylate; a low viscosity aliphatic diacrylate oligomer; tris

(2-hydroxy ethyl) isocyanurate triacrylate; 2-phenoxyethyl acrylate; a difunctional bisphenol A

based epoxy acrylate blended with 40% 1,6 hexanediol diacrylate; a difunctional bisphenol A

based epoxy acrylate blended with 50%, 2-phenoxyethyl acrylate; and acrylic acid.

13. (Original) The system as in claim 11, wherein the acrylate comprises at least one non-

alkoxylated monomer.

14. (Original) The system as in claim 1, further comprising a unit for applying a photoabsorptive

material to the coating.

15. (Original) The system as in claim 1, wherein the coating comprises at least one of: 2,4-di-tert-

butyl-6-(5-chlorobenzotria zol-2-yl) phenol; 2-(2H-benzotriazol-2-yl)-6-dodecyl-4-methyl-

phenol; a mixture of reaction products of methyl 3-(3-(2H-benzotraizole-2-yl)-5-t-butyl-4-

hydroxyphenyl-) proprionate and PEG 300; branched and linear 2-(2H-benzotriazol-2-yl)-6--

dodecyl-4-methylphenol; 2-(2'hydroxy-5'methacryloxyethylphenyl)-2H-benzotr- iazole; 2,2'-

dihydroxy-4-methoxybenzophenone; 2-Hydroxy-4-n-octoxybenzophe- none; and, octyl

methoxycinnamate.

16. (Original) The system as in claim 1, wherein the system comprises an optical media

replication system.

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17. (Original) The system as in claim 1, wherein the format of the optical media comprises one of DVD 5, DVD 9, DVD 10, DVD 18, DVD-R, DVD-RW, CD-Audio, CD-Video, CD-R, CD-RW, CD-ROM, CD-ROM/XA, CD-i, CD-Extra, CD-Photo, Super-Audio CD, Blu-Ray, Mini-Disc and a hybrid format.

18. (Currently Amended) The system as in claim 1, wherein the first applying unit comprises at least one spin coating station.

19. (Currently Amended) The system as in claim 1, wherein the third image creating unit comprises a photomask comprising an image of the marking.

20. (Currently Amended) The system as in claim 1, wherein the third image creating unit comprises a direct writing laser for forming an image of the marking.

21. (Currently Amended) The system as in claim 1, wherein the third image creating unit comprises an electronically programmable photomask for forming an image of the marking.

22. (Currently Amended) The system as in claim 1, further comprising a fourth unit comprising an inspection station for inspecting the quality of at least one of the substrate, the coating, the curing of the coating, and the marking in the coating.

23. (Cancelled).

24. (Original) The system as in claim 1, further comprising a system controller for operating the system.

25. (Original) The system as in claim 1, wherein the marking comprises at least one of: text information, alphanumeric characters, symbols, graphic information, embedded information, a digital watermark and a covert marking.

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26. (Original) The system as in claim 1, wherein the marking comprises at least one of identification information, authentication information, instructional information, advertising, branding, and promotional information.

27. (Currently Amended) A system for applying a color forming coating to a data the readout area of an optical media, the system comprising: a first unit for applying a color forming coating composition comprising at least one photosensitive material to form a the color forming coating over to the data readout area of the optical media, the coating comprising a photocurable component sensitive to a first set of ultraviolet (UV) light wavelengths and a photosensitive color forming component sensitive to a second set of UV light wavelengths substantially separate from the first set of wavelengths; a light source for exposing the coating to the first set of wavelengths a second unit comprising a first ultraviolet (UV) light source for exposing the coating to the first set of wavelengths of UV light wherein the wavelengths of UV light cure the coating upon the data readout area; a third unit for creating an image of the marking, the third unit comprising a second UV light source with the second set of UV light wavelengths for exposing at least a portion of the coating to the image for recording the marking into the coating, further comprising a conveyor to transport the optical media from the first unit to the second unit and to the third unit in a sequential manner.

28. (Currently Amended) A system for marking the readout area of an optical media, the system comprising: a station for receiving an the optical media, the optical media comprising at least a color forming coating is disposed thereon, the coating comprising: a photocurable component sensitive to a first set of wavelengths and a photosensitive color forming component sensitive to a second set of wavelengths substantially separate from the first set of wavelengths, a unit for creating an image of a marking; and, a light source for producing the second set of wavelengths and exposing at least a portion of the coating to the image for recording the marking into the coating a first unit for applying a the color forming coating composition comprising at least one photosensitive material and at least one photocurable material to form a coating over a the data readout area of the optical media, the at least one photocurable material of the coating

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composition comprising a photocurable component being sensitive to a first set of ultraviolet (UV) light wavelengths and a the at least one photosensitive color material forming component being sensitive to a second set of UV light wavelengths substantially separate from the first set of UV light wavelengths; a light source for exposing the coating to the first set of wavelengths a second unit comprising a first ultraviolet (UV) light source for exposing the coating to the first set of wavelengths of UV light wherein the wavelengths of UV light cure the coating upon the readout area; a third unit for creating an image of the marking, the third unit comprising a second UV light source with the second set of UV light wavelengths for exposing at least a portion of the coating to the image for recording the marking into the coating, further comprising a conveyor to transport the optical media from the first unit to the second unit and to the third unit in a sequential manner.

29. (Currently Amended) The system as in claim 28, further comprising a <u>fourth</u> unit for applying an overcoat over the color forming coating.

- 30. (Cancelled).
- 31. (Cancelled).
- 32. (Cancelled).
- 33. (Cancelled).
- 34. (Cancelled).
- 35. (Cancelled).
- 36. (Cancelled).
- 37. (Cancelled).

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- 38. (Cancelled).
- 39. (Cancelled).
- 40. (Cancelled).
- 41. (Cancelled).
- 42. (Cancelled).
- 43. (Cancelled).
- 44. (Currently Amended) A system for applying a marking to an optical media, the system comprising: a first unit for applying a color forming coating composition comprising at least one photosensitive material and at least one photocurable material to form at least one color forming layer over to at least one data readout area of an the optical media; a second unit comprising a first ultraviolet (UV) light source for exposing the at least one color forming layer to a first band of UV light wavelengths to cure the at least one color forming layer; a third unit comprising a second light source for selectively exposing at least a portion of the at least one color forming layer to a second band of UV light wavelengths for recording the marking into the at least one color forming layer; a fourth unit for applying at least one overcoat layer to the at least one color forming layer; and, a fifth unit comprising a third light source for exposing the at least one overcoat layer to a third band of UV light wavelengths for curing the at least one overcoat layer, wherein the wavelengths produced by the first UV light source comprise wavelengths substantially separate from wavelengths of the second UV light source, further comprising a conveyor to transport the optical media from the first unit to the second unit and to the third unit in a sequential manner.
- 45. (Currently Amended) The system as in claim 44, wherein the at least one overcoat layer

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comprises at least one of a photoabsorptive material and an acid scavenger.

46. (Original) The system as in claim 44, wherein the at least one overcoat layer exhibits a high degree of optical density at the second band of wavelengths.

47. (Cancelled).

48. (New) A system for applying a marking to an optical media, the system comprising:

a preliminary station where a substrate of an optical media is formed;

a first unit where spincoating of a color forming composition is performed to create a color forming layer;

a second unit comprising a first ultraviolet (UV) light source which cures the color forming layer through emission of UV light corresponding to a first set of wavelengths;

a third unit comprising a first mask and a second ultraviolet (UV) light source that emits UV light through the first mask onto the optical media to image a marking of a first color in the color forming layer;

a fourth unit comprising a second mask and a third UV light source that emits UV light through the second mask onto the optical media to image a marking of a second color in the color forming layer; and

a fifth unit comprising a third mask and a fourth UV light source that emits UV light through the third mask onto the optical media to image a marking of a third color in the color forming layer.

49. (New) A system for applying a marking to an optical media according to claim 48, further comprising a finishing station comprising inspection equipment used to inspect the optical media for rejection or acceptance, wherein the optical media is transported through the system via a conveyor, wherein the first UV light source provides UV light of a set of wavelengths that is substantially different from the set of wavelengths of the UV light provided by any of the second, third, and fourth UV light sources.

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50. (New) A system for applying a marking to an optical media according to claim 49, further comprising a system controller that controls each of the preliminary station, finishing station, and first through fifth units.

51. (New) A system for applying a marking to an optical media according to claim 50, wherein the inspection equipment is capable of detecting surface defects in the form of height variations of about 100 nanometers and lateral variations of about 200 microns.

52. (New) A system for applying a marking to an optical media according to claim 50, further comprising the color forming composition.

53. (New) A system for applying a marking to an optical media according to claim 50, further comprising the optical media with embossed data.

54. (New) The system as in claim 1, further comprising the optical media comprising a base layer with embossed data.

55. (New) The system as in claim 18, the first unit comprising an optical media spinning speed of between about 30 to 100 revolutions per minute (RPM) when coating material is dispensed, an acceleration of up to about 2000 revolutions per second per second (RPSS), and a multi stage spin-up.